

TO THE CHAIRMAN AND MEMBERS OF THE BOGNOR URBAN DISTRICT COUNCIL.

GENTLEMEN,

I beg to lay before you my 30th Annual Report on the Health and Sanitary Conditions of the Urban District of Bognor for the year ending the 31st December, 1919.

The area of the District is 865 acres and contains about 2150 inhabited houses.

During the last five years the increase in the number of inhabited houses has been as follows :

In 1915 there were 2084 Inhabited Houses.

„ 1916	„	„	2092	„	„
„ 1917	„	„	2143	„	„
„ 1918	„	„	2149	„	„
„ 1919	„	„	2150	„	„

Owing to the increase in price of material, labour, etc., there has not been as much building during the year as before the war, but twenty-seven plans of new buildings and alterations to old buildings have been approved by the Council. Two buildings were erected, seven in course of erection and seven temporary buildings have been put up.

ESTIMATE OF POPULATION.

The war has made it impossible to adhere to the usual methods of estimation of Local Population hitherto in use.

The corrected estimate which I have received from the Registrar General for the calculation of Death Rate is :—8388 and for the calculation of Birth Rate is :—8738.

The gross number of Deaths occurring within the District during the year was 109, viz :—53 males and 56 females.

These deaths were distributed over the 12 months as follows :—

	Males.	Residents. Females.	Total.	Males.	Non-Residents. Females.	Total.
January	4	5	9	1	0	1
February	9	3	12	0	0	0
March	7	6	13	0	1	1
April	5	4	9	1	0	1
May	2	2	4	2	0	2
June	1	0	1	0	3	3
July	3	3	6	0	0	0
August	4	2	6	0	2	2
September	3	3	6	1	1	2
October	2	6	8	0	2	2
November	3	6	9	0	1	1
December	5	6	11	0	0	0
Totals	48	46	94	5	10	15
109						

I have received from the County Medical Officer of Health the names of 13 Bognor Residents who died in the Royal West Sussex Hospital, the Workhouse Infirmary and other places outside the Urban District of Bognor.

These Deaths, in accordance with instructions of the Ministry of Health, are not included in the figures used in arriving at the death rate of the District, but they are included in Table III which deals with deaths at various ages, of residents, whether occurring in or beyond the District.

The Total number of Deaths and the Death Rates for the previous 10 years are as follows :—

Year.	Total.	Rate.
1910	78	9'6
1911	96	11'7
1912	106	12'6
1913	102	11'8
1914	108	12'3
1915	107	13'8
1916	87	11'4
1917	102	12'6
1918	116	13'9
1919	109	12'9

The estimated Death Rate of the Deaths occurring within the District as calculated on the estimate of population, which I have received from the Registrar General, is :—12'9 per 1000.

The various ages at which death occurred during the year under Report were as follows :—

Under 1 year	5
1 year and under 5 years	2
5 years „ „ 15 „	10
15 „ „ „ 25 „	2
25 „ „ „ 45 „	15
45 „ „ „ 65 „	28
65 „ „ „ 80 „	26
80 „ „ and over	21
	—
	109
	—

The ages of death of those of over 80 years were as follows :—

3	at	80
2	„	81
5	„	82
3	„	83
4	„	84
1	„	86
1	„	87
1	„	93
1	„	99

The chief causes of death at various ages will be found in Table III.

Tables 1, 2, 3 and 4 hitherto required by the Local Government Board are not for this year asked for, but for the sake of continuity I have made the entries in the Tables as heretofore.

During the year, there were, in the District, 5 deaths of infants under 1 year of age, which gives an Infantile Mortality Rate of 0'5 per 1000 general population, and 41'3 per 1000 Births registered.

These were distributed over the 12 months as follows :—

	Males.	Females.	Total.
January	—	—	—
February	—	1	1
March	—	1	1
April	—	—	—
May	—	—	—
June	—	—	—
July	—	—	—
August	—	—	—
September	—	—	—
October	—	—	—
November	—	2	2
December	—	1	1
	—	—	—
	—	5	5
	—	—	—

Under the Infectious Diseases Notification Act, 1889, adopted by your Council in 1891, I have received 216 Notifications, viz :—

Enteric Fever	2
Dysentery	2
Erysipelas	1
Pneumonia	5
Diphtheria	96
Scarlet Fever	20
Measles	67
German Measles	22
Encephalitis Lethargica	1
	—
	216
	—

The above Notifications for 1919 were distributed over the 12 months as follows :—

	Measles.	Scarlet Fever.	Diphtheria.	Pneumonia.	German Measles.	Erysipelas.	Enteric Fever.	Dysentery.	Enceph- alitis lethar- gica.
January	1	3	5	—	—	—	—	—	—
February	16	10	1	—	7	—	—	—	—
March	10	2	2	4	2	—	—	—	—
April	4	—	3	1	4	1	—	—	—
May	3	2	14	—	2	—	—	—	—
June	20	—	6	—	7	—	—	—	—
July	7	—	9	—	—	—	—	—	—
August	6	1	5	—	—	—	1	—	—
September	—	2	11	—	—	—	—	—	—
October	—	—	6	—	—	—	—	1	1
November	—	—	10	—	—	—	—	—	—
December	—	—	24	—	—	—	1	1	—
	—	—	—	—	—	—	—	—	—
Totals	67	20	96	5	22	1	2	2	1
216	—	—	—	—	—	—	—	—	—

83 cases of Diphtheria and 8 of Scarlet Fever were sent to the Isolation Hospital of which 6 cases of Diphtheria died.

The corrected Death Rate from Zymotic diseases is :—1·1 per 1000 general population.

Totals notified during the last 10 years were :—

1909	...	17	1914	...	11
1910	...	46	1915	...	44
1911	...	43	1916	...	124
1912	...	22	1917	..	221
1913	...	17	1918	...	62

The accommodation at the Isolation Hospital provides 12 beds for Scarlet Fever patients namely, 6 male and 6 female, and 12 beds for Diphtheria patients, namely, 6 male and 6 female.

Disinfection of premises after occupation by patients suffering from Notifiable Diseases was carried out to the satisfaction of the Sanitary Authority, in all cases.

DIPHTHERIA.

During the year, there were, as is shown by the above Table, 96 cases of diphtheria notified. Although fairly numerous during the first half of the year, there was a considerable increase in the number of cases during the latter half.

The cases, which were of a fairly mild type, were almost entirely confined to the children attending the Public Elementary Schools. The closing of the Schools during the periods shown in another section of this report did not seem to have any effect in diminishing the number of cases. This is not surprising when it is remembered that a large majority of the children congregate in other places in the district.

The spread of the disease was without doubt due to a number of "Carrier" Cases, and as many of these cases are not detected, it is extremely difficult to carry out efficient supervision with regard to isolation.

In all cases after notification of the disease the contacts were swabbed and the "Positives" promptly isolated.

Diphtheria Antitoxine which is supplied free of cost by the Council was freely used in every clinical case.

There was no evidence to show that the spread of the disease was due to infected milk, nor was the disease confined to any special area of the town. Eighty-three cases were removed to the Isolation Hospital, and this, no doubt, to a great extent prevented a further spread of the infection, and at the same time provided the most satisfactory arrangement for the treatment of the disease.

The Matron and Nurses deserve all praise for the way in which they carried out their duties, and I have no hesitation in saying that not a few of the patients owe their recovery, to the untiring devotion of the Staff, and the skilful manner in which they were nursed whilst in the Hospital.

Under the Public Health (Tuberculosis) Registration Act, 1912, which requires notification of all cases of Tuberculosis and came into force on the 1st February, 1913, I have received 21 certificates which are classified thus :—

	Males.	Females.	Total
Pulmonary	12	7	19
Non-Pulmonary		2	2
	<u>12</u>	<u>9</u>	<u>21</u>

A Dispensary is provided at Chichester for treatment of these cases when necessary. There is no accommodation for these cases in the Urban District of Bognor.

BIRTHS.

The number of births registered in the District for the year 1919, was 121 ; namely 68 males and 53 females.

This gives the birth-rate, calculated on the estimate of population as received from the Registrar General, of 13·8 per 1000 estimated population.

The births were distributed over the 12 months as follows :—

	Males.	Females.	Total.
January	4	2	6
February	6	2	8
March	5	4	9
April	7	6	13
May	5	3	8
June	3	5	8
July	5	2	7
August	3	4	7
September	5	2	7
October	9	8	17
November	6	9	15
December	10	6	16
	<hr/> 68 <hr/>	<hr/> 53 <hr/>	<hr/> 121 <hr/>

The figures for the previous 5 years are as follows :—

	Males.	Females.	Total.	Rate.
1915	79	51	130	15·0
1916	56	62	118	14·6
1917	63	50	113	12·5
1918	54	69	123	13·2
1919	68	53	121	13·8

Six Births of illegitimate children which occurred in the District are included in the number registered.

THE HEALTH VISITOR.

The Nurse who carries out this duty works under the direction of the County Council, and the Bognor District Nursing Association.

This Association also employs the services of two Maternity Nurses.

All Nurses do much useful work in the Town ; and whenever they have occasion to call attention to nuisances or sanitary defects in houses visited by them, these are immediately attended to by the Sanitary Inspector or myself.

MATERNITY AND CHILD WELFARE.

The Bognor Centre was established by, and is under the control of the West Sussex County Council. The County Medical Officer of Health is responsible for its Administration assisted by a Committee of Local Ladies.

The centre was opened on the 30th May, 1918, at the Parochial Hall, London Road.

The Centre is open every Thursday for the General Supervision of the infants and on every alternate Thursday a Medical Officer attends to examine them and give such advice to the Mothers as may be necessary. Miss Smith, the Superintendent of the West Sussex County Nursing Association, also attends on the other alternate Thursdays and gives lectures on Mother Craft and Home Nursing.

The Children are supervised at the Centre from birth until School age, when they are handed over to the Supervision of the School Medical Officer at the School Clinic.

At the Centre, Expectant and Nursing Mothers are also advised as to the care and maintenance of their own health.

There is also a department where Mothers can obtain patterns, material and advice as to the making of baby clothes, and such nourishments as virol, malt and cod liver oil and various infant foods, when prescribed by the Medical Officer.

The Centre comprises three rooms :—

The first, where the Mothers wait and where tea is served to them at a moderate charge.

The second, where the Children are undressed and weighed and the records kept.

The third room is the Consulting room where the Mothers and Children are seen by the Medical Officer, who is assisted by the District Maternity Nurses.

During the year 1919 the number of Children on the register was 130 with an average weekly attendance of 27. The number of visits paid by the Nurses to the children at home being 2,000 and to expectant Mothers 100, for the year.

Milk, eggs and other assistance given during the year to 40 Mothers and Children.

Provision also is made for Mothers to be sent to the Brighton Lying-in Hospital when necessary.

The Public Elementary Schools have been closed by order of the County Medical Officer of Health on account of Diphtheria, for the following periods :—

Bognor (Nyewood)	from 30th May to 29th June.
„ (Council)	„ 4th June „ 27th June.
„ „	„ 3rd July „ 11th July.
„ „	„ 15th „ „ 31st „
„ (South Bersted)	„ 3rd Dec. „ end of term.

All the Public Elementary Schools are supplied with Town Water and are in a sanitary condition.

During the vacations they are thoroughly cleaned and disinfected.

A special School Medical Officer is appointed by the County Council for the inspection of the children in these schools.

MOTOR AMBULANCE VAN.

The Motor Ambulance Van presented to the Council in 1918 has continued to give good service, though it was unfortunately laid up for some time owing to a breakdown, and the difficulty of obtaining replacements.

During 1919 it made a total of 32 journeys, 26 of which were either to the Royal West Sussex Hospital or to the Workhouse Infirmary at Chichester, 8 were for the moving of invalids in the Town, and 3 long distance journeys, i.e. Tunbridge Wells, Guildford and London.

THE BOGNOR WAR MEMORIAL HOSPITAL.

The establishment of the Bognor War Memorial Hospital has filled a want that has been felt for many years.

The house known as Springfield, Chichester Road was purchased and vested in Trustees.

Half the purchase money was given by Mr. James Fleming of Aldwick, and the rest raised by Public Subscription. Mr. Fleming also very generously endowed the Hospital.

A few necessary alterations converted the house into a Hospital with four wards, giving accommodation for 16 patients, a well fitted operating theatre, an out patients department and an X ray room.

The Hospital is managed by a Committee.

The Medical Board consists of most of the Medical Practitioners in the Town.

The Institution was formally opened on July 16th, 1919 and has already proved most useful to many patients who would otherwise have had to go to the Royal West Sussex Hospital at Chichester, or have been nursed, under unfavourable conditions in their own homes.

Up to the end of the year 1919 over 50 in-patients had received treatment.

The Hospital has an arrangement with the Ministry of Pensions whereby both In and Out patients receive treatment.

The Sea fishing forms the principal industry of the town and no trade is carried on which could have any prejudicial influence on the public health. For years the locality has been a resort for persons seeking rest and restoration to health.

The aspect of Bognor is almost due South; it is sheltered from the East and North-east winds by the south downs. The air is remarkably pure, balmy and bracing, having the mildness of the South and the dryness of the East Coast. The surface soil is gravelly and very porous, the roads dry very rapidly after the rain. Fogs are rare, and in Summer few days occur without sea breezes tempering the heat.

The prevailing wind is South-West. Snow is rarely seen and when it falls it disappears rapidly.

The sands decline gradually from the Parade, constituting a safe playground for children. At high tide the sea reaches the parade, the foreshore thus getting washed twice daily.

The Water supply of the Town is ample in quantity and still maintains its high standard of purity as shewn by the accompanying report. It is drawn from deep wells at the foot of the Downs about 7 miles distant, where there is a pumping station which fills a covered service reservoir on the side of the hill, from which the water falls by gravitation to the Town.

THE LABORATORY,

11, BILLITER SQUARE,

LONDON, E.C. 3.

REPORT ON A SAMPLE OF WATER RECEIVED ON OCTOBER 8TH FROM THE BOGNOR WATER
COMPANY, LONDON ROAD, BOGNOR.

The sample, which was quite clear and colourless, gave, on analysis, the following results,
which are expressed in parts per 100,000 :—

Chlorine	2'64
Sulphuric Acid (SO ₃)	0'82
Nitric Acid (N ₂ O ₅)	2'46
Phosphoric Acid	None
Free Ammonia	Trace
Albuminoid Ammonia	0'0030
Oxygen absorbed from permanganate at 80°F in 15 mins.	0'007
Ditto ditto 4 hrs.	0'015
Total solids dried at 212°F.	34'88
Loss on Ignition	1'00
Appearance of solids on heating	Very slightly darkening.
Hardness—Permanent	6'6
„ Temporary	18'6
„ Total	25'2

BACTERIOSCOPIC EXAMINATION :—

Total number of organisms per cubic centimetre	46
Growing at Blood heat in agar	6
B. Coli—not detectable in 36 cubic centimetres.	

The composition of the Supply has undergone no change whatever since the date of the last analysis in October 1918, and, in fact, for a very much longer period, showing that it is not influenced by any alterations in meteorological conditions, etc.

The water is remarkably pure, chemically and bacterially and is in every way admirably suited for public use.

(Signed) HEHNER & GRIMWOOD.

THE SALE OF FOOD AND DRUGS ACT.

Under the above Act thirty-eight samples of Milk were analysed during the year 1919, by the Public Analyst, of which 24 were genuine and 14 did not comply with the Board of Agriculture Standard i.e. 3% fat, 8'5% non fatty solids.

The following were condemned as being unfit for human consumption :—

The carcases of 4 cows which were affected with Tuberculosis.

A quantity of boneless beef.

9 cases of bloaters.

1 „ „ dates.

3 „ „ mackerel.

70-lbs. „ bacon.

2 boxes of prunes.

The sanitary condition of the premises where foods are prepared, stored or exposed for sale is satisfactory.

There are no underground bakehouses in the District.

THE FACTORIES on the Register at the end of the year, under the supervision of the Council are 13 in number and are classified as follows :—

Steam Laundry	1	Machinist	1
Stone Mason	1	Beer Bottling	1
Forge Contractors	2	Motor Works	4
Printers	2	Shoemaker	1
Total—13.			

In every one of these a copy of the Factory Act is hung in a conspicuous position.

THE WORKSHOPS on the Register at the end of the year were 75 and are classified as follows :—

Bakehouses	8	Undertakers & Cabinet Makers	2
Tailors	6	Coach Builders	2
Carpenters	12	Brick Makers	1
Shoemaker	8	Harness Makers	2
Cycle Manufacturers	4	Dress Makers	13
Plumbers	5	Laundries	5
Horse Farriers	3	Watch Makers	4
Total—75.			

Two complaints were dealt with during the year 1919. Both were complaints from the Home Office, one for the town water to be laid on, and the other with regard to sanitary accommodation not being for separate sexes. Both complaints have been remedied.

Systematic inspections of the District have been made from time to time, or as occasion required, by myself, or the Sanitary Inspector. Regular monthly reports of the work have been laid before the Sanitary Committee.

Besides this general supervision I have paid 76 special visits in cases where required.

DAIRIES AND COWSHEDS.

The Policy adopted by the Council in 1912 for the proper inspection of the Dairies, Cowsheds, Milkshops and Slaughter Houses by a Veterinary Surgeon, has been carried out and his report on the matter is as follows :—

“Since my return to civil practice I have during the past half year regularly inspected all cows and cowsheds in the district from which milk is supplied to the Town.

I beg to report that things are gradually coming back to their pre-war standard, as you are no doubt aware that owing to lack of labour, there has not been as much whitewashing of sheds and byres as I should like to see. As regards the milkers, in the majority of cases these men are clean and are carrying out the instructions given them with regard to the washing of cows' udders, and their personal cleanliness, in order to prevent transport of disease from their handling of milk. I must remark that owing to the removal of the “Tuberculosis Order” I have observed an increase in the number of tuberculous animals on many farms; these animals are mostly “dry” or “in calf” and turned out. No cows showing udder trouble are milked for human consumption.

I am glad to be able to report that those farmers, using various forms of patent milking apparatus, have discarded them, and the milking is now being done by hand, therefore facilitating the immediate discovery of any udder trouble that may arise from time to time.

With regard to the Town Horses I am glad to report, with the exception of one "army horse," which has suffered several times from attacks of Colic, the rest have been free from sickness and lameness. The stables are well kept and the animals thoroughly looked after."

(Signed) JAS. T. ANGWIN, M.R.C.V.S.

Veterinary Inspector.

HOUSING AND TOWN PLANNING.

The Council own 43 cottages which were built before the war and they are now erecting seven more, constructed out of Army huts, in Gravit's Lane, which will soon be ready for occupation. They also propose to erect on Geall's Brickfield :—

28a	Urban	No. 2
26a	„	„ 3
4b4	„	„ 5

and in the Linden Avenue Estate :—

16b4	Urban	No. 5
12b4	„	„ 4

making a Total of 86.

(a) comprises 3 bedrooms, living room, scullery, bath, etc.

(b1) „ 4 „ parlour and living room, scullery, bath, etc.

As the Army Hut Cottages seem to be so satisfactory as regards accommodation, appearance and cost, it is highly probable that this scheme may be extended to the end of Gravit's Lane, where I am informed there are still 12 building sites.

Five houses were inspected under and for the purpose of Section 17 and two were found to be in a state so dangerous or injurious to health as to be unfit for habitation. The general character of the defects found to exist were :—bad drainage, damp walls, leaking roofs, defective gutters and pipes and insanitary paving in yards and sculleries, and in most cases no proper provision for the storing of food.

During the year 37 Nuisances were investigated, in 11 cases notices were served, the other cases were abated without notices being served.

No cases of overcrowding were reported.

Movable dust-bins have been provided in 15 cases.

ROADS AND FOOTPATHS.

The repair of the roads and footpaths is now proceeding under better conditions than existed during the war although materials are still difficult to obtain in any quantity.

One noticeable improvement now being undertaken is the Chichester Road from Middle Bersted to the Railway Gates, which is being reconstructed and the surface formed with tarred slag. Already a quantity of this material has been laid and it gives a good idea of what a splendid road it will make when finished.

A new road has been constructed from Linden Road to Linden Avenue to give better facilities for access to the housing sites in Sheepwash Lane and Gravits Lane.

This new road will now form a short cut to the Town. It has been laid out on broad lines with easy curves at the entrance to the road, it is sewered, kerbed, channelled and lighted, and the gas and water mains are laid.

Another new road is being constructed on a piece of land in Sheepwash Lane known as Geall's Brickfields which has been purchased as a housing site. This work is now nearing completion and will be one of the best constructed roads in the Town. It will be 24-feet between the kerbs, then 3½-feet grass sward and a 6-feet composition stone pavement. It is sewered and the whole land sub-soil drained. Gas and water mains will be laid.

SEWERAGE.

The system has worked well during the year but a serious breakdown occurred at the Sewage Outfall Works at Felpham caused by the subsidence of the Tidal Valve Chambers, and the iron pipes on either side of it. It appears that the wrought iron bolts, which held the flanged pipes together, gave way through decay and the joints opened to such an extent that the sand was being sucked into the outfall pipe and then of course the subsidence gradually took place each day until the valve chamber was undermined and began to get out of the perpendicular. The work was undertaken immediately the defects were noticed and the repairs involved the difficult task of sinking to a depth of over 13-feet in running sand and under pinning the whole of the pipes and the valve chamber. The cost of the work was over £300.

The Surveyor (Mr. Bridges) well deserved the congratulations and thanks, of the Council, which he received on the completion of the work.

THE DESTRUCTOR which has been working since October 1911, is very satisfactory. During the year 1919 there have been 2541 loads of refuse burnt; 534 loads of clinkers and 86 loads of ashes have been used by the Council on the roads and footpaths.

The sale of ashes realised	£58	4	0
„ „ „ clinkers „	£5	15	0
„ „ „ bottles „	£9	6	9
making a total of	£73	5	9

THE MUNICIPAL PIGGERIES.

The Council piggery is still in existence although only undertaken as a War measure to help increase the food supply. I am told it is still a profitable investment for the Town.

I would draw your attention to the fact that the work of the Public Health Department steadily increases, as year by year Parliament throws greater and more extended responsibilities upon Local Authorities.

I enclose Tables I, II, III, and IV, as hitherto required by the Local Government Board, and I take this opportunity of thanking the Members of the Sanitary Committee and the Inspector of Nuisances for the courtesy and help they have extended to me during the year.

I beg to remain,

Your obedient Servant,

W. CONWAY-COOKE,

Associate of King's College, London.
Fellow of the Royal Institute of Public Health,
Medical Officer of Health.

Bognor,

April, 1920.

TABLE I.
Vital Statistics of the Whole District during 1919 and previous Four Years.
BOGNOR URBAN DISTRICT.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un-corrected Number.	Nett.		Number.	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 Year.		All ages.	
			Corrected Number.	Rate.					Number	Rate per 1,000 Nett Births	Number	Rate.
1915.	7673	130	132	15.0	106	13.8	9	7	9	68.1	104	13.5
1916.	{ For Birth Rate. }	118	121	14.6	87	11.4	11	16	3	24.7	92	12.0
	{ For Death Rate. }											
1917.	{ For Birth Rate. }	113	115	12.5	102	12.6	15	18	5	43.4	105	13.0
	{ For Death Rate. }											
1918.	{ For Birth Rate. }	123	123	13.2	116	13.9	16	21	8	65.0	121	14.5
	{ For Death Rate. }											
1919.	{ For Birth Rate. }	121	122	13.9	109	12.9	15	13	6	49.1	107	11.5
	{ For Death Rate. }											

TABLE II.
Cases of Infectious Diseases notified during 1919.
BOGNOR URBAN DISTRICT.

NOTIFIABLE DISEASE.	AT ALL AGES.		TOTAL CASES REMOVED TO ISOLATION HOSPITAL.
Enteric Fever	...	2	...
Dysentery	...	2	...
Erysipelas	...	1	...
Pneumonia	...	5	...
Diphtheria	...	96	83
Scarlet Fever	...	20	8
Measles	...	67	...
German Measles	...	22	...
Encephalitis Lethargica	...	1	...
Pulmonary Tuberculosis	...	19	...
Other forms of ,,	...	2	...
Totals	...	237	91

Bognor Isolation Hospital is situated in Sheepwash Lane, within the District, and is provided by the Bognor Urban District Council.

TABLE III.
Deaths registered during the Year 1919 classified by age and cause.
BOGNOR URBAN DISTRICT.

Causes	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the District.								
	All Ages	Under 1 year	1 year and under 2	2—5	5—15	15—25	25—45	45—65	65 and upwards
Measles	4	...	...	...	4	...	...	...	...
Diphtheria	4	...	...	2	2	...	...	...	...
Influenza	4	I	...	...	...	...	I	...	2
Phthisis (Pul. Tuberculosis) ...	7	...	...	...	...	...	3	4	...
Tuberculous Meningitis ...	I	I	...	...	...	...	...	...	...
Other Tuberculous Diseases ...	2	...	...	...	I	I	...	...	...
Cancer, Malignant Disease ...	13	...	...	...	...	...	...	5	8
Organic Heart Disease ...	9	I	...	...	...	...	I	3	4
Bronchitis	6	...	...	...	...	...	...	...	6
Pneumonia	I	...	...	...	...	...	I	...	...
Appendicitis	I	...	...	...	...	...	I	...	...
Cirrhosis of Liver	I	...	...	...	...	...	...	I	...
Nephritis	3	...	...	...	...	...	...	I	2
Congenital Debility	I	I	...	...	...	...	...	...	...
Violent Deaths, excluding Suicide	I	...	...	...	...	...	...	I	...
Other Defined Diseases ...	49	2	...	...	...	I	II	8	27
Totals	107	6	...	2	7	2	18	23	49

TABLE IV.
BOGNOR URBAN DISTRICT.
INFANT MORTALITY.
1919. Nett Deaths from stated causes of Infants under 1 Year of Age.

Causes	3-4 Weeks.	Total under 1 Month.	3-6 Months.	6-9 Months.	9-12 Months.	Total Deaths under One Year.
Tuberculous Meningitis ...	...	...	...	I	...	I
Debility	I	I	...	...	...	I
Pneumonia ... ..	...	...	...	...	I	I
Other causes ... ..	...	...	...	3	...	3
Totals	I	I	...	4	I	6

NETT BIRTHS registered during 1919	{	legitimate ... 116 illegitimate 6	{	NETT DEATHS of Infants under 1 year of age registered during 1919	{	legitimate ... 6 illegitimate ... 0
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REPORT ON THE CLIMATOLOGY OF BOGNOR

during the Year 1919.

MR. CHAIRMAN AND GENTLEMEN,

We have the privilege to submit for your information our Report on the climatology of Bognor for the 22nd complete year of our records.

JANUARY like that of the last year was rather dull and decidedly wet. The air pressure was under 30 inches from the 2nd to the 17th inclusive, rain falling every day except the 5th; there was a slight improvement in the weather after this period but with a lower temperature. The 4-ft. subsoil temperature sunk from 49·2 degrees F on the 1st to 45·6 degrees on the 31st. The temperature in the sunshine varied from 52° on the 4th to 105° on the 16th. Hail fell on the 3rd and 8th. A lunar halo was observed on the 6th and was followed by a gale and rain.

Thunder storms occurred on the 9th and 10th and lightning was seen on the night of the 15th. Hoar frost was noted on the 22nd, 23rd, 24th and 27th and snow fell on the 27th, 28th and 31st.

FEBRUARY was a cold month; N.E. and E. winds prevailing. The mean barometric pressure, mean temperature, and bright sunshine were all below the average of the last 21 years, and the total rainfall was slightly above the average. Snow which fell at the end of January was lying on the ground on the 1st of February, and a little more fell with rain on the 17th and 18th. A Solar halo was observed about hour 13 (1 p.m.) on the 13th which was a fine and frosty day, and no rain followed immediately: the 16th was the wettest day having wet fog, rain and hail. From the 6th to the 14th inclusive was a fine and dry period.

MARCH.—A cold month with air pressure mostly below 30 inches the adjusted readings of the barometer being above that pressure on only 7 mornings. The six days, 13th to 18th, formed a more anticyclonic period than the rest of the month; but the nights were cold. Heavy falls of rain occurred on the 3rd, 5th and 19th. Solar halos were observed on the 1st and 17th, followed by rain. Hail fell on the 26th and 31st; and snow on the 23rd, 28th and 30th, that on the 28th produced 12 millimetres or 0·47 of an inch of water. The total quantity of precipitation was excessive. The afternoons of the 3rd and 4th were foggy. Bright sunshine was deficient in amount particularly during the first fortnight. During the 19th, the day having the greatest quantity, the Black-bulb thermometer indicated a solar radiation of only 58°F or 287·4° Absolute.

APRIL fairly maintained its traditional character of variableness though chiefly in the item of temperature particularly in the nights. The air pressure was never less than that of 29 inches of mercury and increased to over 30·7 inches or 1039·7 millibars on the 21st. The 4-ft. subsoil temperature rose from 44·2° on the 1st to 46·6° on the 30th.

From the 1st to the 8th, and 16th to 23rd both inclusive were dry periods; the 12th and 28th were also rainless.

Bright sunshine was deficient in amount although only the 6th and 11th were quite without.

A heavy squall occurred on the night of the 14th with rain. Thunder storms occurred on the 24th and 26th with rain, and hail on the latter date, on the morning of which also a rain-bow was seen. Thunder only was heard on the 9th during a passing rain shower; and again on the 27th with rain, and a little snow during the night. Soft hail with rain fell on the 29th.

MAY was dry, warm and sunny. Air pressure was fairly steady about 30 inches, never rising much above nor falling far below that point. The mean temperature as shown in Table II was slightly above the average; the maximum shade temperature varied from 51.6° F to 71.0° F, and the minimum from 40.6° to 56.8° F.; that in the sunshine ranged from 103° on the 1st to 132° on the 7th; and the 4-ft. subsoil temperature rose from 46.4° on the 1st to 51.5° on the 31st.

The relative humidity of the air was mostly below the normal and the amount of rain slight, the last 19 days being without, with the exception of the 15th which had a passing shower of .008 inch.

Bright sunshine was abundant, several days having between 80 and 90 per cent. of the possible amount. The 12th was a foggy day and no sunshine was recorded. Fog was also noted on the 4th, 11th and 23rd. A thunder storm occurred about hour 19.30 on the 9th. A solar halo was observed on the 21st.

Mr. Bridges obligingly had the railings round our enclosure and the thermometer screen and fittings repainted this month; a work very much needed as it had not been renewed for the last 3 or 4 years.

JUNE was warm, dry and sunny, only the 20th which was rainy having no sunshine registered. The dry period of 19 days in May continued to the 18th of June, the 4th only having a shower in the afternoon of .016 inch.

The air pressure was above 30 inches except on 3 mornings. Temperature was about the average. The grass thermometer was found broken on the 10th and a new instrument was kindly furnished out of the funds of the Advertising Committee. The 4-ft. subsoil temperature increased from 51.7° F. on the 1st to 54.1° on the 30th.

Solar halos were noted on the 11th and 19th, the former being followed by a gale during the afternoon and evening of the 12th; and the latter by heavy rain.

Thunder was heard on the 21st and 27th. A rainbow was noted on the 29th.

JULY was rather cold, deficient in bright sunshine and also in rain. Air pressure differed very little from 30 inches and rose very little above. The shade temperature remained fairly steady from day to day but was below the normal: that in the sunshine ranged from 104° F on the 18th to 134° on the 5th and 13th. The subsoil temperature increased one and half degree only from 54.2 during the month. The relative humidity of the air varied a good deal from day to day but the mean was below the normal. The last 9 days were without rain but bright sunshine was not very abundant.

Thunder was heard on the 1st, and there was a distant thunderstorm in the afternoon of the 5th but Bognor was only on the edge of it and received only about .01 of an inch of rain. A solar halo appeared on the morning of the 9th; this was during a period of five days, 6th to 10th, of dry weather. Sea fog came over on the 18th, an overcast day and was followed by rain on the 19th after 4 dry days.

AUGUST was a delightfully warm month though the maximum temperature never reached 80° F. and the mean was no more than the normal. The air pressure kept the barometer at over 30 inches for the most part, and the relative humidity was rather low.

The Black-bulb thermometer indicated a sunshine temperature of 145° F. on the 5th; and from this it decreased to 118° on the 20th. The subsoil temperature rose from 55.7° on the 1st to 57.8° on the 31st attaining its 56 point on the 4th which is rather later than usual.

The dry spell which began at the latter part of July continued with only one slight break the 4th, up to and including the 17th of August ; after this the weather became unsettled.

Bright sunshine was very plentiful, many days having between 80 and 90 or more per cent. of the possible amount, and not one day being entirely without.

Solar halos were seen on the 10th, 16th and 30th. A rainbow was formed on the evening of the 20th.

A thunder storm with rain occurred on the 29th.

SEPTEMBER was fine and dry. The air pressure and mean temperature were just about the average. Rain fell on 7 days only ; and after the 5th on three occasions only, the 14th, 22nd and 26th.

The Black-bulb thermometer showed extremes of sunshine temperature of 136°F. and 89°F.

The subsoil temperature increased from 57'8° F. at the beginning to 58'6° in the middle and decreased to 57'2° at the end of the month.

Bright sunshine was a little above the average and only the 26th was without any.

A very distant thunderstorm with a little rain was noted on the 5th, and lightning with rain on the evening of the 14th. Sea fog spread inland in the evenings of the 8th, 9th and 12th ; and on the 8th also a lunar corona was observed.

OCTOBER was a notably fine and dry month ; but rather cold. The mean pressure of the air, and the amount of bright sunshine were the greatest for October in our Records ; and the mean max. and min. and the average mean temperatures and the quantity of rain were the lowest on record for this month.

The Black-bulb thermometer indicated a range of temperature between 120° and 68° F. this last occurring on the 24th which was the dullest and wettest of the only 4 rain days during the whole month—the others being the 1st, 12th and 29th. Dew only was deposited on the 19th and 20th and the very small quantity of water resulting, being no more than '004 of an inch in each case, although included in the total rainfall the days are not reckoned as "raindays."

The subsoil temperature declined from 56'9° on the 1st to 56° on the 10th and further to 53° on the 31st. Zodiacal light was observed in the evening of the 1st and a little lightning later.

NOVEMBER was cold and rather dull—air pressure, temperature, and sunshine were all below the average ; and although the relative humidity of the air was generally above the normal, except on a few days about the middle of the month, the quantity of rain which fell was also a trifle under the average of this month.

The air pressure sent the mercury above 30 inches on only 7 days. The sunshine temperature ranged from 49° on the 4th to 100°F. on the 24th ; and that of the subsoil decreased from 52'7° on the 1st to 49°F. on the 30th.

Hoar frost was recorded on the 11th, 12th, 15th, 16th, 26th, and 30th, and in the evenings of the 15th, 16th and night of the 25th lightning was seen ; a thunder storm occurred in the evening of the 17th. A little snow fell in the evening of the 12th and was lying on the ground the following morning. A short squall with rain and hail occurred on the night of the 24th. On three days, the 7th, 13th and 17th, there was a little fog.

DECEMBER on the whole was rather dull and wet but not very cold. Barometric readings varied from day to day but were neither very high nor low. Solar radiation dropped from 103°F. on the 10th to 51°F. on the 11th and these were the extremes. The 4-ft. subsoil temperature varied but little being 48'9° at the beginning and 47'6° at the end of the month.

Hoar frost was noted on the 8th, 9th, 17th and 26th. A squall of rain and soft hail occurred on the 24th and lightning was seen in the evening of that day, and also on the 21st. Lunar halos were noted on the 5th and 31st; and fogs on the 16th, 17th, 20th, and 29th, the first was a ground fog through which the stars were visible.

The dates of the warmest days and coldest nights of each month may be seen in Table II under "Highest Max." and "Lowest Min." The warmest day of the year was the 2nd of August with a maximum temperature of 78° F. or 298·6 A. The warmest night was August 19th when the minimum temperature was 63·6 F. or 290·6 A. The coldest day of the year was the 31st January with a max. temperature of 31·1 F. or 272·5 A., and the coldest night was that of the 8th February when the min. fell to 22·7 F., or 267·8 A.

Messrs. Guernonprez, F. J. and H. Neale have kindly furnished us with their statistics of Rainfall as usual.

A. G. THOMPSON, C.E., F.R. Met. Soc.

H. C. L. MORRIS, M.D., F.R. Met. Soc.

TABLE I.

Air Pressure at 9 a.m.							Wind.									
1919.	Barometer reduced to 320 and Mean-Sea level + gravity at Lat. 45°.	Difference from Average of 21 years 1898-1918.	Highest adjusted reading.	Date.	Lowest adjusted reading.	Date.	Number of times observed to be blowing from								CALM.	
							N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.		
	Ins.	In.	Ins.		Ins.											
January.	29·844	— 0·224	30·689	24th	28·736	5th	0	10	2	1	2	12	1	3	0	
February.	29·803	— ·141	30·739	9th	28·995	20th	2	9	10	1	2	3	0	1	0	
March.	29·854	— ·020	30·589	17th	29·333	20th	5	6	1	1	2	8	4	4	0	
April.	30·016	+ ·082	30·704	21st	29·078	15th	1	8	0	0	3	7	7	4	0	
May.	30·082	+ ·110	30·376	24th	29·596	2nd	0	4	8	7	0	6	5	1	0	
June.	30·184	+ ·173	30·565	10th	29·955	12th	2	3	0	3	1	12	2	7	0	
July.	30·074	+ ·055	30·263	10th	29·632	1st	3	6	1	0	2	7	4	8	0	
August.	30·056	+ ·072	30·315	12th	29·402	26th	2	2	2	1	0	11	9	4	0	
September.	30·056	+ ·007	30·479	17th	29·495	23rd	2	6	4	1	3	7	5	2	0	
October.	30·186	+ ·253	30·629	19th	29·545	1st	7	8	3	5	0	0	2	6	0	
November.	29·808	— ·153	30·331	1st	29·420	6th	3	13	1	0	0	4	5	4	0	
December.	29·899	— ·004	30·365	18th	29·210	31st	5	1	0	0	3	12	9	1	0	
Average for the year.	29·989	+ 0·017				Totals.	32	76	32	20	18	89	53	45	0	

TABLE III.

1919.	Humidity.				Rainfall. Waterloo Square.					
	Average Temperature at 9 a.m. of		Vapour pressure.	Relative Humidity. Saturation = 100.	Monthly Totals.	Difference from average of 21 years 1898-1918.	Greatest fall in 24 hours.		Number of rain days of not less than .01 inch.	Number of days of .04 in. or 1 mm. or more.
	Dry Bulb.	Wet Bulb.								
January	° F. 39·9	° F. 38·3	Inch. 0·214	% 86·3	Ins. 5·15	Ins. + 2·86	Ins. 0·64	Date. on 9th	24	19
February	37·7	36·1	·197	84·4	2·23	+ ·04	·58	„ 16th	15	8
March	41·7	39·2	·218	81·1	4·76	+ 2·77	1·13	„ 19th	19	13
April	46·4	43·2	·248	78·1	1·60	+ ·05	·39	„ 27th	12	10
May	57·0	53·0	·356	76·9	·46	— 1·27	·22	„ 9th	8	3
June	58·6	54·1	·367	73·9	·66	— 1·07	·49	„ 20th	6	2
July	58·5	54·9	·386	78·7	·82	— ·64	·23	„ 19th	10	7
August	64·2	59·6	·449	74·5	3·18	+ ·97	·71	„ 27th	11	9
September	58·7	55·3	·403	79·3	1·05	— ·78	·64	„ 22nd	7	4
October	48·6	45·6	·277	79·0	·38	— 2·95	·18	„ 24th	4	4
November	39·8	38·3	·219	86·9	2·55	— ·40	·43	„ 30th	17	12
December	44·4	42·9	·260	87·9	4·89	+ 1·64	·87	„ 15th	26	19
Year's Average. Totals.	49·6	46·7	0·300	80·6	27·73	+ 1·06			159	110

TABLE IV.

RAINFALL.												
1919.	Bognor. Albert Road.				Felpham.				Lidsey.			
	Total rain.	Number of rain days of ·01 or more.	Greatest fall.	Date.	Total rain.	Number of rain days of ·01 or more.	Greatest fall.	Date.	Total rain.	Number of rain days of ·01 or more.	Greatest fall.	Date.
January	Ins. 5·18	23	Ins. 0·70 on 9th		Ins. 5·09	23	Ins. 0·65 on 9th		Ins. 5·62		Ins.	
February *	2·32	15	·48 „ 16th		2·46	13	·59 „ 16th		2·55			
March	4·84	19	·97 „ 19th		4·59	19	·86 „ 19th		5·14			
April	1·65	11	·42 „ 27th		1·80	10	·43 „ 27th		1·85			
May	·48	5	·27 „ 9th		·44	5	·26 „ 9th		·31			
June	·71	6	·46 „ 20th		·63	6	·51 „ 20th		·82			
July	1·13	10	·24 „ 19th		1·09	11	·25 „ 5th		1·34			
August	2·98	11	·63 „ 27th		2·99	11	·52 „ 27th 30th		2·95			
September	1·01	7	·56 „ 22nd		·97	7	·28 „ 21st		1·10			
October	·45	6	·22 „ 24th		·42	5	·21 „ 24th		·49			
November	2·72	18	·38 „ 27th		2·25	17	·44 „ 26th		2·30			
December	4·56	24	·73 „ 15th		4·78	24	·81 „ 15th		4·97			
Totals.	28·03	155			27·51	151			29·44			

TABLE V.

1919.	Bright Sunshine.						
	Totals.	Difference from Average of 21 years 1898-1918.	Percentage of possible amount.	Number of Sun-recorded days.	Brightest Days.		Percentage of possible amount.
					Date.	Hours.	
	Hours.	Hours.					
January	54.2	— 13.6	20.7	24	18th	7.3	85.9
February	69.4	— 25.2	24.8	16	8th	8.6	80.3
March	104.2	— 32.4	28.4	23	30th	10.6	83.4
April	162.2	— 29.0	39.3	28	3rd	10.8	83.1
May	255.1	+ 25.5	53.2	30	29th & 30th	14.0	87.5
June	228.7	+ 1.2	46.6	29	10th & 15th	14.2	87.1.86.6
July	139.7	—100.5	28.3	28	16th	12.7	79.5
August	252.9	+ 30.2	56.4	31	7th	14.0	94
September	190.8	+ 3.9	50.5	29	9th & 11th	11.8	90.7.91.5
October	180.2	+ 62.9	54.5	27	3rd	10.4	90
November	71.6	— 12.1	26.8	18	12th	7.2	79.5
December	47.3	— 8.5	19.1	18	8th	6.0	75
Totals.	1756.3	— 97.6	39.4	301			